STATE OF SOUTH CAROLINA

BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

In re: Implementation of requirements arising from Federal Communications Commission triennial UNE review; Local Circuit Switching for Mass Market Customers.	))))	Docket No. 2003-326-C

AFFIDAVIT

I , James C. Falvey depose and say as follows:

1. The facts contained herein are true and based upon my personal knowledge.

2. I am a citizen of Millersville, Maryland, where I have resided since 1996. I am 41 years of age. I am not under any disability and am fully competent to make this affidavit.

2. My name is James C. Falvey. I am employed as Senior Vice President of Regulatory Affairs by Xspedius Communications, LLC ("Xspedius"). My business address is 7125 Columbia Gateway Dr., Suite 200, Columbia, Maryland 21046.

3. I have been asked by CompSouth to provide some basic information about Xspedius.

4. It is my understanding that Xspedius has been named by BellSouth as a Self-Provider using our own local circuit switches in South Carolina to serve mass market customers.

5. I am familiar with the FCC definitions in the Triennial Review Order of "enterprise customers" and "mass market customers".

6. Based on these definitions, Xspedius should not be considered a Self Provider of analog Plain Old telephone Service ("POTS") to the mass market utilizing our switches in South Carolina. The principal business of Xspedius is to serve the enterprise and not the mass market in the areas in South Carolina where our switches are located. Today, Xspedius actively markets to medium and large business enterprise customers with a high demand for a variety of sophisticated data-centric telecommunications services and solutions.

7. As an initial matter, the FCC has stated that the mass market is made up of residential and small business analog POTs customers. While Xspedius does serve a very small number of small business customers, Xspedius does not serve any residential customers in South Carolina.

8. Specifically, Xspedius currently serves 1,092 voice grade equivalents (VGEs) in South Carolina. Of that small number of lines, Xspedius has only 104 DS-0 lines operational on its South Carolina switches. This does not begin to include all the other Internet and data services that Xspedius sells in the state of South Carolina. These DS-0 customers are an incidental part of Xspedius' business. Serving these DS-0 customers is not currently, and never has been, a significant part of Xspedius sales and marketing efforts.

9. The small business customers are not "mass market customers" in the sense that they are not "lower revenue accounts characterized by low margins and serviced on a month to month basis and not pursuant to annual contracts". As discussed in Xspedius' marketing materials on its web site, Xspedius offers Complete Access, an integrated T-1 product designed for and marketed to sophisticated small and midsize companies with complex voice and data telecommunications needs. The Xspedius T-1 products are not designed for very small business customers and would not represent an efficient or affordable solution to the needs of very small business customers. Xspedius Complete Access is an "integrated T-1" service integrating local, long distance, and toll-free on a single T-1. It is sold with or without dedicated Internet service.

10. Xspedius utilizes an individualized contract with each customer. As a result, the lower revenues and "churn" experienced by carriers serving mass market customers tends not to be present with Xspedius' targeted customer segment.

Further affiant sayeth not,

Signed to this 12th day of March, 2004.

James C. Falvey

Signature of Affiant

James C. Falvey

Print Name of Affiant

STATE OF Maryland

COUNTY OF Howard

In Columbia, on the 12th day of March, 2004, before me, a Notary Public in and for the above state and county, personally appeared James C. Falvey, known to me or proved to be the person named in and who executed the foregoing instrument, and being first duly sworn, such person acknowledged that he or she executed said instrument for the purposes therein contained as his or her free and voluntary act and deed.

NOTARY PUBLIC

RABINAI E. CARSON
NOTARY PUBLIC
HOWARD COUNTY
MARYLAND
My Commission Expires Apr 26, 2007

STATE OF SOUTH CAROLINA

BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

In re: Implementation of requirements arising from Federal Communications Commission triennial UNE review; Local Circuit Switching for Mass Market Customers.	))))	Docket No. 2003-326-C

AFFIDAVIT OF KMC TELECOM, INC.

1. My name is Mike Duke. The facts contained herein are true and based upon my personal knowledge.

2. I am over the age of 21. I am not under any disability and I am fully competent to make this affidavit. I am employed as Director of Government Affairs by KMC Telecom, Inc. ("KMC"). My business address is 1755 North Brown Road, Lawrenceville, GA 30043.

3. I have been asked by parties to Docket No. 2003-326-C to provide some basic information about KMC.

4. I understand that in pleadings filed in Docket No. 2003-326-C that KMC has been named by BellSouth as a Self-Provider of analog POTS services using our own local circuits in South Carolina to serve mass market customers.

5. In preparation for filing this Affidavit, I have relied on certain definitions of terms included in the FCC's Triennial Review Order ("TRO"). The TRO defines enterprise customers as follows:

- Are typically medium or large business customers with high demand for a variety of sophisticated telecommunications services that use loops with DS1 capacity and above; TRO ¶ 452
- Are characterized by relatively intense, often data centric, demand for telecommunications services sufficient to justify service via high-capacity loops at the DS1 capacity and above; TRO ¶ 451
- Purchase extensive local services resulting in significant revenues to the service provider, allowing a greater opportunity to recover any non-recurring costs associated with the 'set-up' of the loop and switch facilities necessary to provide service; TRO ¶ 452
- Generate comparably greater revenues than residential customers sufficient to justify the sunk and fixed costs of installing the switch; TRO ¶ 452 and
- Are more willing to sign annual or term commitments. TRO ¶ 452

6. The TRO defines mass market customers as follows:

- Are residential and very small business customers; TRO ¶ 497
- Do not require high bandwidth digital connectivity (i.e., DS1 and above) unlike enterprise customers; TRO ¶ 497
- The accounts tend to be smaller, lower revenue accounts characterized by low margins and are often serviced on a month to month basis and not pursuant to annual contracts; TRO ¶ 459 and Note 1405
- Are consumers of analog plain old telephone service or "POTS"; TRO ¶ 459
- Purchase a limited number of POTs lines that can only economically be served via analog loops; TRO ¶ 497
- Move freely from carrier to carrier which can cause a significant amount of churn; TRO ¶ 471 and
- Have come to expect the ability to change local service providers in a seamless and rapid manner. TRO ¶ 467

7. Based on these definitions, KMC should not be considered a Self Provider of analog Plain Old telephone service ("POTS") to the mass market utilizing our switches in Tennessee. The principal business of KMC is to serve the enterprise and not the mass market in the areas in South Carolina where our switches are located. Today, KMC markets only to medium and large business enterprise customers with a high demand for a variety of sophisticated data-centric telecommunications services and solutions.

8. As an initial matter, the FCC has stated that the mass market is made up of residential and small business analog POTs customers. KMC does not actively market services to customers who desire to be served over analog DSO-level loops. KMC actively markets only to customers who plan to purchase digital service at capacities that justify the use of DS1-level loops. The number of voice lines needed by this type of customer often varies, but the customer's service needs are such that it wants to ensure sufficient capacity by purchasing service at a DS1 level.

9. There are two specific instances in which KMC may offer DS0 level service while marketing only to DS1 level enterprise customers. First, existing business customers who order additional voice services from KMC may, on occasion, be at capacity on their existing DS1 facility, necessitating the provisioning of individual DS0 level facilities at an existing location. The second instance occurs when a prospective or existing customer wishes to include other locations into their service package, but those locations do not have sufficient volume to justify a full DS1. KMC would also provision individual DS0s to such locations.

10. In the past, KMC has offered DS0-level services to South Carolina business customers. In recent years, however, KMC has taken steps to minimize the number of DS0 customers served by our switches. We have sought to limit future DS0 level sales and to provide incentives for existing DS0 level customer to seek other service providers by establishing internal pricing and contribution guidelines, which included raising the rates for the very smallest business customers, those with 1 to 4 business lines or trunks (effective on December 20, 2002 billing cycle).

11. KMC's June 2003 FCC Form 477, Local Competition and Broadband Reporting, Part II: Wireline and Fixed Wireless Local Telephone reported that [redacted] of total voice-grade equivalent lines were used for residential and small business service.

Further affiant sayeth not.

Mike Duke

STATE OF GEORGIA
COUNTY OF GWINNETT

Sworn and subscribed to before me this 2nd day of March, 2004

Notary Public
My commission expires December 16, 2007

DEBRA A. FONTENOT NOTARY PUBLIC FORSYTH COUNTY, GEORGIA MY COMMISSION EXPIRES DEC. 16 2007

STATE OF SOUTH CAROLINA

BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

In re: Implementation of requirements arising from Federal Communications Commission triennial UNE review; Local Circuit Switching for Mass Market Customers.	))))	Docket No. 2003-326-C

AFFIDAVIT OF NUVOX COMMUNICATIONS, INC.

I, Hamilton Russell, III, being duly sworn, depose and say as follows:

1. The facts contained herein are true and based upon my personal knowledge.

2. I am a citizen and resident of Greenville, South Carolina. I am 34 years of age. I am not under any disability and I am fully competent to make this affidavit.

3. I am employed by NuVox Communications, Inc. ("NuVox") as its Vice President of Regulatory and Legal Affairs. My business address is 301 North Main Street, Greenville, SC 29601.

4. NuVox's southeastern headquarters are located in Greenville, South Carolina. NuVox employs a staff of approximately 350 people in its Greenville offices. NuVox has regional sales offices, and provides world-class data and voice services in South Carolina, South Carolina, Georgia, Tennessee, Kentucky and Florida.

5. NuVox was founded in 1997 under its former name of State Communications, Inc. ("State"). State initially focused on total service resale to residential and small business customers. This initial business plan was unsuccessful and resulted in a substantial loss of capital and other resources.

6. In 1999 the company changed its direction by revising its business model to deploy its own facilities and provide local and long distance telecommunications services as well as high-speed data services, web hosting and web design to small business customers. That same year the company changed its name to Trivergent Communications, Inc. While the company worked to deploy its own switching facilities and complete collocations, Trivergent entered into negotiations regarding a potential merger with Gabriel Communications, Inc. ("Gabriel"), a facilities-based Competitive Local Exchange Provider ("CLEC") headquartered in Chesterfield Missouri. The merger of Gabriel and Trivergent was completed on November 1, 2000. The combined company adopted NuVox Communications as its new operating

name in February of 2001. The company focused on continuing to build out its own facilities to provide broadband products and services to business customers.

7. NuVox currently offers bundled local voice and data services, domestic and international long distance services, dedicated high speed Internet access including business class calling features and wide area network management, virtual private networks, website design and hosting and domain services in thirty markets across thirteen. One of NuVox's standard product offerings, the NuBundle Business Package, includes unlimited high speed Internet access, web design, hosting and domain services, and feature-rich local and long distance services.

8. NuVox's Integrated Services Digital Network Primary Rate Interface (ISDN PRI) offers high quality, low cost, switched digital communications over standard phone lines. The concept of ISDN is the integration of analog voice with digital data over the same network. The NuVox ISDN PRI conforms to the CCITT NI2 standard and is delivered on a digital pipe with 23 "B" channels to carry voice and a single "D" channel that carries control and signaling information. Our ISDN PRI supports switched inbound and outbound voice for both local and long distance telecommunications service. Further information and marketing material concerning NuVox's services is accessible on the company's web site at www.NuVox.com

9. I have been asked by CompSouth to provide some basic information about NuVox.

10. I have been told by CompSouth that NuVox has been named as being a Self Provider of analog POTS services using our own local circuit switch in South Carolina to serve mass market customers.

11. In preparation for filing this Affidavit, I have been told by CompSouth that the FCC has defined the enterprise customers and the enterprise market as follows:

Enterprise customers:

- are typically medium or large business customers with high demand for a variety of sophisticated telecommunications services that use loops with DS1 capacity and above;
- are characterized by relatively intense, often data centric, demand for telecommunications services sufficient to justify service via high-capacity loops at the DS1 capacity and above;
- purchase extensive local services resulting in significant revenues to the service provider, allowing a greater opportunity to recover any non-recurring costs associated with the 'set-up' of the loop and switch facilities necessary to provide service;
- generate comparably greater revenues than residential customers sufficient to justify the sunk and fixed costs of installing the switch; and
- are more willing to sign annual or term commitments.

12. In preparation for filing this Affidavit, I have been told by CompSouth that the FCC has defined mass market customers and the mass market as follows;

- are residential and very small business customers;
- do not require high bandwidth digital connectivity (i.e. DS1 and above) unlike enterprise customers;
- the accounts and tend to be smaller, lower revenue accounts characterized by low margins and are often serviced on a month to month basis and not pursuant to annual contracts;
- are consumers of analog plain old telephone service or "POTS";
- purchase a limited number of POTs lines can only economically be served via analog loops;
- move freely from carrier to carrier which can cause a significant amount of churn and;
- have come to expect the ability to change local service providers in a seamless and rapid manner.

13. Based on these definitions, I can state that NuVox should not be classified as a Self Provider of analog Plain Old telephone Service ("POTS") to the mass market utilizing our switch in Greenville. NuVox's principal business is to actively market and provide bundled voice and data services to certain small, medium and large size business customers within the company's limited marketing and service footprint. These bundled voice and data services are provided utilizing digital connectivity via T-1(i.e. DS-1) loops. In addition, NuVox does not provide or market analog POTS services to residential customers off of our switch in Greenville.

14. NuVox is not actively providing residential analog voice service under its present business plan and has no plans to do so in the future.

15. The basic method by which NuVox serves business customer's bundled voice and data needs in South Carolina is through a T-1 provisioned to the NuVox switch in Greenville . NuVox may install equipment at the customer's demarcation point and at its collocation site at the ILEC wire center. Further, NuVox does not utilize DSOs in its South Carolina market for provision of service.

SOUTH CAROLINA

Switch Name	Total Number of voice grade equivalent lines (VGE)	Total Number of DSO lines	Percentage of VGE lines, DS1 & above
Greenville	17,156	630	96%

Further, affiant sayeth not.

Hamilton Russell, III

Sworn and subscribed before me
This 2 day of March, 2004

Peggy Jones Kimbrell
Notary Public
My Commission Expires: 1/30/05

STATE OF SOUTH CAROLINA

BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

In re: Implementation of requirements arising from Federal Communications Commission triennial UNE review; Local Circuit Switching for Mass Market Customers.

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Docket No. 2003-326-C

AFFIDAVIT OF ITC DELTACOM COMMUNICATIONS, INC.

I , Steve Brownworth , being duly sworn, depose and say as follows:

1. The facts contained herein are true and based upon my personal knowledge.

2. I am a citizen and resident of Georgia. I am 44 years of age. I am not under any disability and I am fully competent to make this affidavit.

3. My name is Steve Brownworth . I am employed as I am employed as Vice President, Systems Planning by ITC^DeltaCom Communications, Inc. ("ITC^DeltaCom"). My business address is 1791 O.G. Skinner Drive, West Point, GA 31833.

4. I have been asked by CompSouth to provide some basic information about ITC^Deltacom.

5. It is my understanding that ITC^Deltacom has been named by BellSouth as a Self-Provider using our own local circuit switches in South Carolina to serve mass market customers.

- I am familiar with the FCC definitions in the Triennial Review Order of "enterprise customers" and "mass market customers".

6. Based on these definitions, ITC^Deltacom should not be considered a Self Provider of analog Plain Old telephone Service ("POTS") to the mass market utilizing our switches in South Carolina. The principal business of ITC^Deltacom is to serve the enterprise and not the mass market in the areas in South Carolina where our switches are located in South Carolina. ITC^Deltacom recently acquired BTI Telecom. ITC^Deltacom also acquired the switches of that company throughout the southeast. BTI's business plan included some provisioning of retail DSO lines for the mass market, but that business plan is no longer in place, nor is that a part of the ITC^Deltacom business plan. Today, ITC^Deltacom actively markets to medium and large business enterprise customers with a high demand for a variety of sophisticated data-centric telecommunications services and solutions. There are some DSOs on the ITC^Deltacom switches in South Carolina as a result of the merger of ITC^Deltacom and BTI, but ITC^Deltacom would not actively provide mass-market facility based service in South Carolina today.

As discussed in ITC^Deltacom's marketing materials on its web site, ITC^Deltacom offers local service products including "Dune" and "Unity". .Dune is a facility-based local service offering that furnishes your business with up to 24 lines while combining local and long distance service onto a digital T-1. Unity combines your communications services on a new or existing T-1, giving you access to term and bundled voice service discounts. Unity is a facility-based T-1 connection that provides your business with 24 channels and combined local and long distance services on a single invoice. Unity's simple business trunk lines include options for additional features, such as DID on a per circuit basis, ISDN, PRI with ANI delivery, additional telephone numbers, and overflow protection when all 24 circuits are in use

7. The FCC has stated that the mass market is made up of residential and small business analog POTs customers. While ITC^Deltacom does serve a very small number of small business customers through own switches, ITC^Deltacom does not actively serve residential customers in South Carolina via UNE-L. ITC^DeltaCom does have legacy retail customers served with DS0s that were hot cut back in 1997-2000 time frame, but we are not actively serving or marketing these customers. Any service of residential customers would be handled through the Grapevine division that provisions such service through UNE-P.

8. Specifically, ITC^Deltacom currently serves a total of 53,765 voice grade equivalents (VGEs) in South Carolina. Yet ITC^Deltacom has only 3,061 DSO ports operational on the South Carolina switches to service UNE-L customers, just 5.7% of the total VGE switch ports in the state. These DS-0 customers are an incidental part of ITC^Deltacom's business.

9. The small business customers are not "mass market customers" in the sense that they are not "lower revenue accounts characterized by low margins and serviced on a month to month basis and not pursuant to annual contracts".

South Carolina

Switch Name	Total Number of voice grade equivalent lines (VGE)	Total Number of DSO lines	Percentage of VGE lines, DS1 & above
Columbia DMS	38,333	1,213	3.2%
Greenville 5E	5,232	792	15.1%
Columbia 5E	5,688	432	7.6%
Charleston 5E	4,512	624	13.8%
TOTAL	53,765	3,061	5.7%

* Columbia, SC services portions of the Charlotte LATA.

Further, affiant sayeth not.

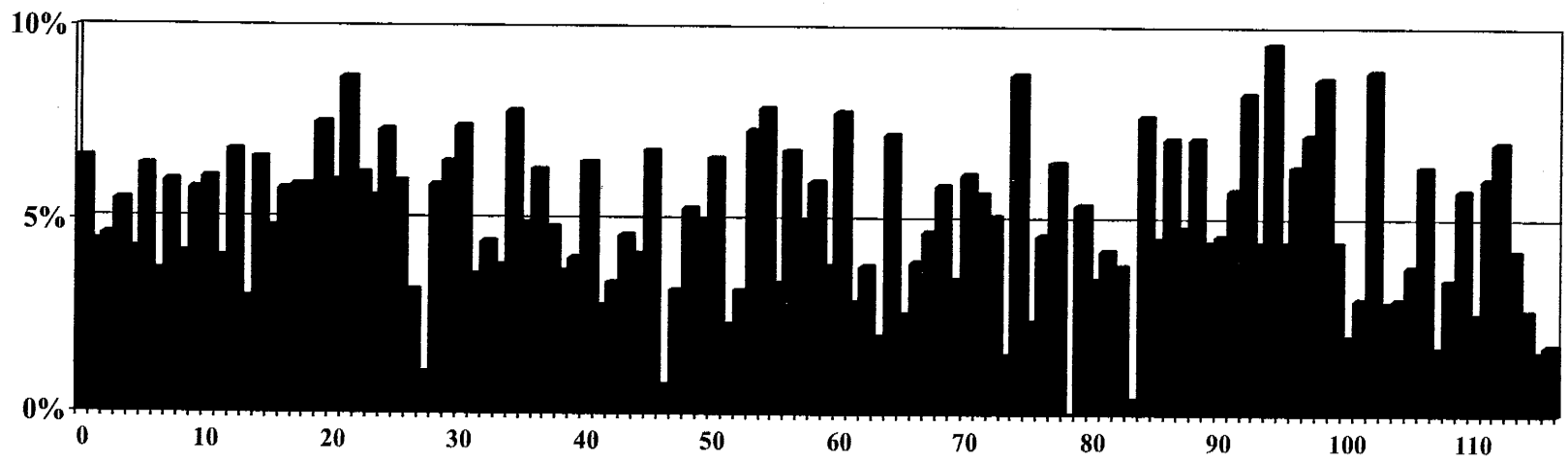
Steve Brownworth

Sworn and subscribed before me
This 9th day of March, 2004

Notary Public
My Commission Expires : 12/07/2005

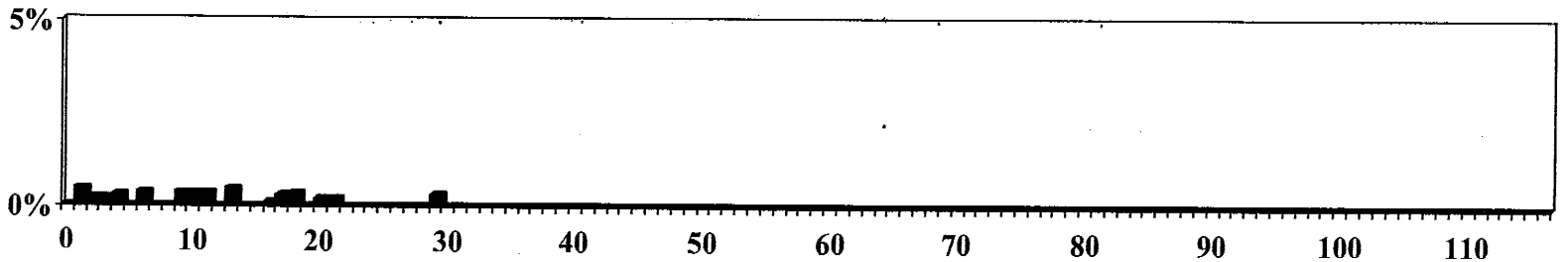
DOCKET 2003-326-C
Exhibit JPG-4
Comparing UNE-P to UNE-L

Competitive Profile of UNE-P Past 6 Months – BellSouth in South Carolina
Lines Added April 2003 through September 2003



Largest Wire Centers ---------- Smallest Wire Centers

Competitive Profile of UNE-L Past 6 Months – BellSouth in South Carolina



Largest Wire Centers ---------- Smallest Wire Centers

Redefinition of the BEA Economic Areas

By Kenneth P. Johnson

THIS ARTICLE presents the new regional economic areas defined by the Bureau of Economic Analysis (BEA) and discusses the procedures used to arrive at this disaggregation of the Nation on an economic basis.[1] The new disaggregation has 172 economic areas, and it replaces the 183-area disaggregation that BEA first defined in 1977 and then revised slightly in 1983 (table 1 and charts 1 and 2). The redefinition was undertaken in 1993 largely to incorporate newly available information on commuting patterns.[2]

To facilitate regional economic analysis, BEA provides geographically detailed economic data by economic area, as well as by State and by local area. BEA assembles economic area data on earnings by industry, employment by industry, total personal income, population, and per capita personal income. These data may be used to analyze local area economic activity, local interindustry economic relationships, and interarea population movements. In addition, the areas are used as major units for BEA's local area economic projections.[3] Historical and projected economic area data are used by government agencies for planning public-sector projects and programs, by businesses for determining plant locations and sales territories, and by university and other research groups for doing regional economic studies.

Each economic area consists of one or more economic nodes—metropolitan areas or similar areas that serve as centers of economic activity—and the surrounding counties that are economically related to the nodes. The main factor used in determining the economic relationships among counties is commuting patterns, so each economic area includes, as far as possible, the place of work and the place of residence of its labor force. The decision to redefine the areas reflects substantial changes in the commuting patterns, as indicated by data from the 1990 Census of Population, and changes in the definitions of metropolitan areas.[4]

In general, the redefinition procedure has three major elements. The first element is the identification of nodes. The second element is the assignment of counties to relatively small economic units known as "component economic areas" (CEA's); each CEA consists of a single economic node and the surrounding counties that are economically related to the node.[5] The third element is the aggregation of the CEA's to the larger economic areas. For a diagrammatic representation of the redefinition procedure, see chart 3.

Identification of nodes

Economic nodes are metropolitan areas or similar areas that serve as centers of economic activity. Of the 3,141 counties in the Nation, 836 are metropolitan counties that make up the 310 metropolitan areas; each of these areas was identified as the node of a CEA.[6] In addition, in parts of the Nation remote from metropolitan areas, 38 nonmetropolitan counties were each identified as a node.

Identification of most of the nonmetropolitan nodes was a four-part process. First, analysis of commuting data for the Nation's 2,305 nonmetropolitan counties showed that 1,112 of these counties are not closely related to a metropolitan area. Second, of these 1,112 counties, 130

1. See "Proposed Redefinition of the BEA Economic Areas," *Federal Register* 59 (November 7, 1994): 55,416–20; and "Final Redefinition of the BEA Economic Areas," *Federal Register* 60 (March 10, 1995): 13,114–18.

2. See "Intent to Revise the Boundaries of the BEA Economic Areas," *Federal Register* 58 (March 9, 1993): 13,049–50. See also Kenneth P. Johnson and Lyle Spatz, "BEA Economic Areas: A Progress Report on Redefinition," SURVEY OF CURRENT BUSINESS 73 (November 1993): 77–79.

3. See Regional Economic Analysis Division, "BEA Economic Area Projections of Income, Employment, and Population to the Year 2000," SURVEY 70 (November 1990): 39–43.

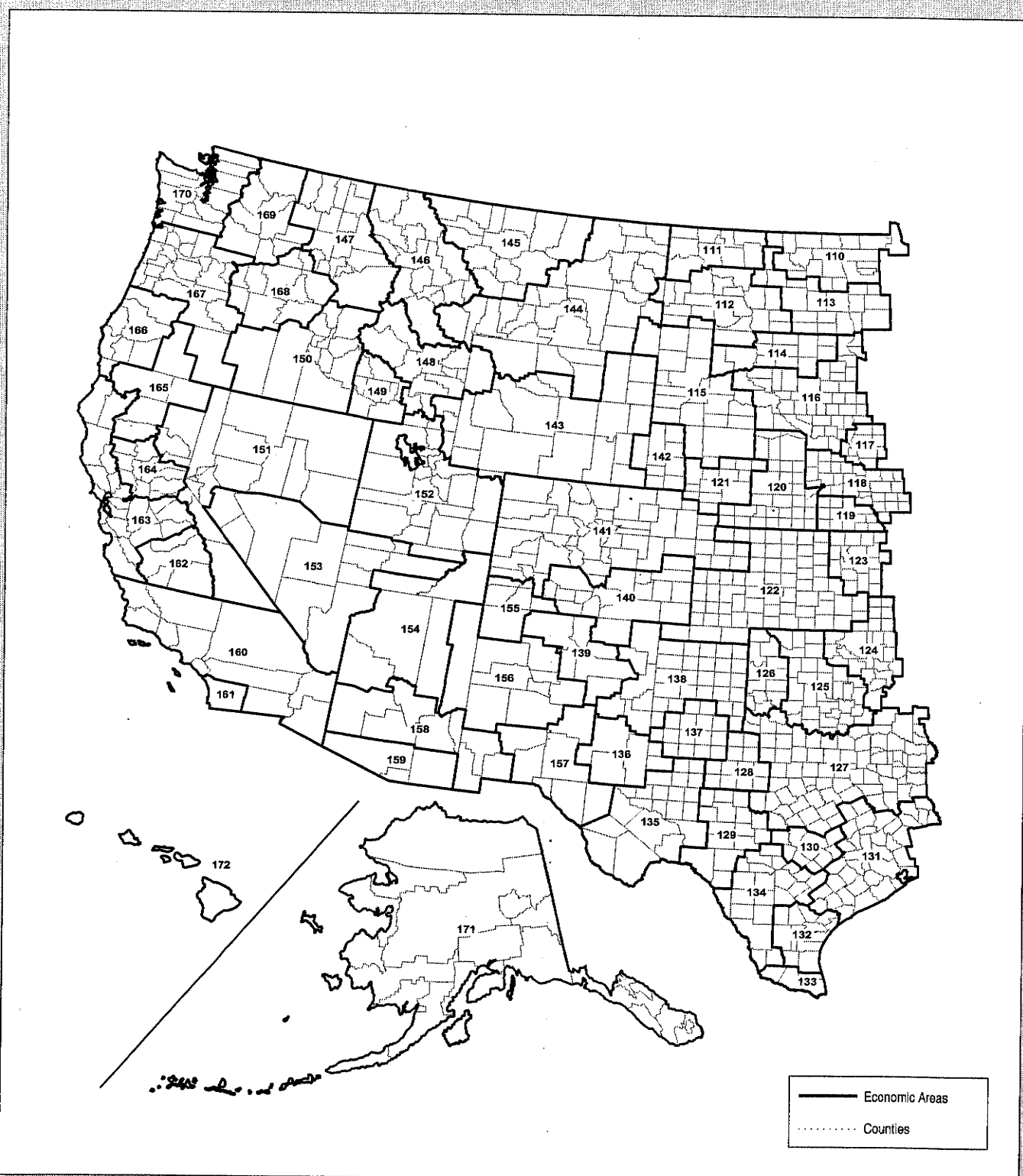
4. The redefinition reflects the changes in the metropolitan-area definitions issued in June 1993 by the Office of Management and Budget for statistical purposes; the definitions of metropolitan areas used by BEA are the county-based definitions. The 310 metropolitan areas consist of 240 metropolitan statistical areas, 59 primary metropolitan statistical areas (PMSA's), and 11 New England county metropolitan areas (NECMA's). (BEA treats the New Haven-Bridgeport-Stamford-Danbury-Waterbury, CT NECMA as a PMSA.)

5. Data for the CEA's can be used by government agencies for administering regulatory programs for small areas and by businesses for developing marketing programs for small areas.

6. The 3,141 counties are those defined as of January 1, 1990; they consist of counties and of areas classified as county equivalents for the 1990 census.

CHART 1

BEA Economic Areas, 110–172



NOTE.—The 172 BEA Economic Areas are defined as of February 1995. For economic-area codes and names, see table 1.

U.S. Department of Commerce, Bureau of Economic Analysis

CHART 2

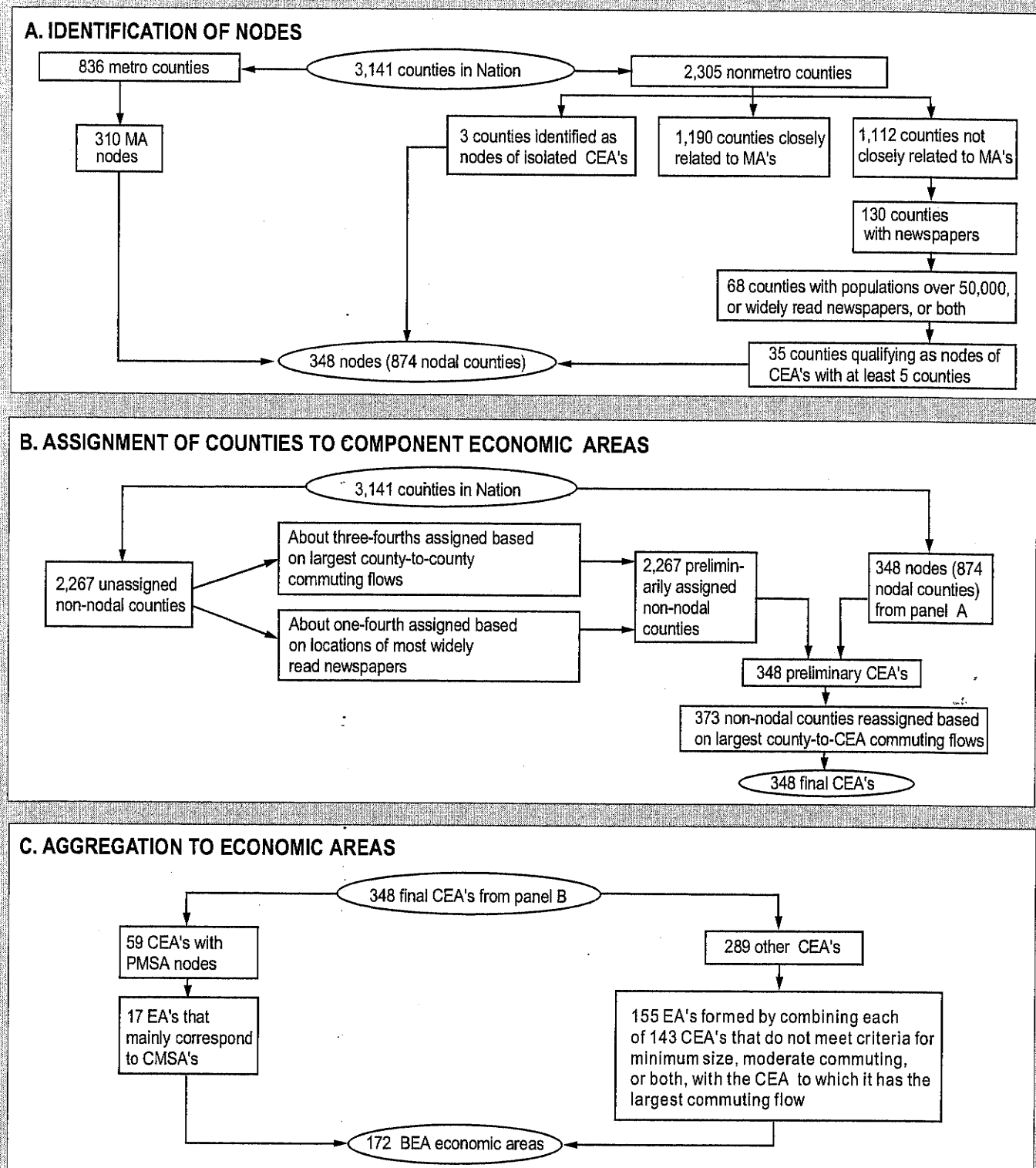
BEA Economic Areas, 1–109

NOTE.—The 172 BEA Economic Areas are defined as of February 1995. For economic-area codes and names, see table 1.

U.S. Department of Commerce, Bureau of Economic Analysis

CHART 3

Redefinition Procedure



CEA Component economic area
CMSA Consolidated metropolitan statistical area
EA Economic area
MA Metropolitan area
Metro Metropolitan
Nonmetro Nonmetropolitan
PMSA Primary metropolitan statistical area

U.S. Department of Commerce, Bureau of Economic Analysis

are locations of newspapers.[7] Third, of these 130 counties, 68 have populations of more than 50,000, or their newspapers are widely read in at least five counties, or both. Fourth, only 35 of the 68 counties qualified as nodes of CEA's that could contain at least five counties. The CEA of each of these 35 nodal counties was named for the city in which the county's major newspaper is published.[8]

In addition, three nonmetropolitan counties were identified as nodes of CEA's because the county contained the largest city in the CEA. These CEA's, which are characterized by their relative economic isolation, are the Alaska panhandle, western Oklahoma, and northern Michigan.

Assignment of counties to component economic areas

Of the 3,141 counties in the Nation, 836 counties constitute the 310 metropolitan area nodes, and 38 counties are identified as nonmetropolitan nodes; together, these 874 counties constitute 348 nodes. Each of the remaining 2,267 nonnodal counties was analyzed to determine the node to which it is most closely related. About three-fourths of these counties were preliminarily assigned to nodes on the basis of their largest county-to-county commuting flows, according to journey-to-work data from the 1990 census. In many instances, the assignment reflected commuting flows to non-nodal counties already assigned to nodes rather than commuting flows to nodal counties. Most of the other counties were preliminarily assigned to nodes on the basis of the locations of the regional newspapers that are most widely read in those counties, according to newspaper circulation data.[9] For all preliminary assignments, the non-nodal counties had to be contiguous to either the nodes or to non-nodal counties already assigned to the nodes.

The preliminary assignment of non-nodal counties to nodes—based on data at the county level—resulted in a preliminary set of CEA's. Data at both the county and CEA levels were then analyzed to ensure that, to the extent possible, each county was assigned to the CEA to which it has the largest commuting flow. This analysis resulted in the reassignment of 373 counties and in the definition of the final set of 348 CEA's.

Availability of Additional Information

The codes, names, and numbers of the counties in each economic area and CEA and of the CEA's in each economic area are available electronically on the Economic Bulletin Board (EBB) from the Commerce Department's STAT-USA. To access the EBB, use a personal computer and modem, dial (202) 482–3870, and follow the instructions. To access the EBB through Internet, use Telnet address "ebb.stat-usa.gov" for remote login, and download the file named "eacodes.exe." For prices and other information about these services, call (202) 482–1986.

The economic area information is also available on a 3½-inch, high-density diskette for $20. When ordering, please specify the BEA Accession Number 61–95–40–101. Send your order, along with a check or money order payable to "Bureau of Economic Analysis," to Public Information Office, Order Desk, BE-53, Bureau of Economic Analysis, U.S. Department of Commerce, Washington, DC 20230. For further information or to order using MasterCard or VISA, call (202) 606–3700.

Aggregation to economic areas

The 348 CEA's were used as "building blocks" for the new 172 economic areas. The CEA's were aggregated to economic areas so that (1) each economic area includes, as far as possible, the place of work and the place of residence of its labor force and (2) each economic area is economically large enough to be part of BEA's local area economic projections program.[10] In general, the aggregation had two parts. First, the 59 CEA's with primary metropolitan statistical areas (PMSA's) as nodes were combined into 17 economic areas, which mainly correspond to the 17 consolidated metropolitan statistical areas (CMSA's) that comprise the PMSA's.[11] Second, each of the 143 CEA's that do not meet criteria for minimum size, for moderate commuting across CEA boundaries, or for both, was combined with the CEA to which it has the largest commuting flow.[12]

7. Data by county on newspaper publication and circulation are from the Audit Bureau of Circulations, an organization whose membership accounts for about 98 percent of U.S. newspaper circulation.

8. The cities are Flagstaff, AZ; Jonesboro, AR; Idaho Falls, ID; Twin Falls, ID; Quincy, IL; Manhattan, KS; Paducah, KY; Bowling Green, KY; Salisbury, MD; Traverse City, MI; Marquette, MI; Mankato, MN; Worthington, MN; Hattiesburg, MS; Meridian, MS; Tupelo, MS; Greenville, MS; Missoula, MT; Butte, MT; Grand Island, NE; North Platte, NE; Norfolk, NE; Scottsbluff, NE; Lebanon, NH; Hobbs, NM; Farmington, NM; Minot, ND; Pendleton, OR; Aberdeen, SD; Watertown, SD; Cookeville, TN; Lufkin, TX; Staunton, VA; Clarksburg, WV; and Bluefield, WV. Hattiesburg, MS was defined as a metropolitan statistical area by the Office of Management and Budget in mid-1994, after the redefinition was under way (see footnote 4).

9. The preliminary assignment of a small number of counties with special features, such as unusually small populations, was based on other procedures.

10. In its forthcoming set of regional projections, BEA plans to publish projections for States in the summer of 1995 and projections for the new economic areas and for metropolitan areas in early 1996.

11. A CMSA has more than 1 million residents and comprises two or more PMSA's.

12. The criteria for minimum size were developed from a combination of data on land area, on number of employed residents, and on number of

By definition, the labor force of an economic area should work and reside in that area, so commuting across boundaries should be limited. An evaluation of journey-to-work data from the 1990 census indicated that net numbers of commuters across the new economic area boundaries are indeed relatively low.[13] About 80 percent of the 172 areas have net commuting rates of 1 percent or less.[14] In contrast, again according to the 1990 journey-to-work data, only about 60 percent of the 183 areas defined in 1977 have net commuting rates of 1 percent or less.[15]

Table 1 follows.

counties, and the commuting criteria were developed from journey-to-work data from the 1990 census.

13. The net number of commuters is the difference between the number of in-commuters (nonresidents who commute to work in an economic area) and the number of out-commuters (residents who commute to work out of an economic area).

14. The net commuting rate is the difference between the in-commuting rate and the out-commuting rate; the rate of in-commuting (or out-commuting) is the number of in-commuters (or out-commuters) as a percentage of the number of employed residents, regardless of their place of work.

15. In the early 1980's, when definitions of the 183 areas were confirmed on the basis of commuting data from the 1980 census, about 80 percent of the 183 areas then had net commuting rates of 1 percent or less.

Table 1.—Codes and Names for BEA Economic Areas

Code	Name
001	Bangor, ME
002	Portland, ME
003	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH-RI-VT
004	Burlington, VT-NY
005	Albany-Schenectady-Troy, NY
006	Syracuse, NY-PA
007	Rochester, NY-PA
008	Buffalo-Niagara Falls, NY-PA
009	State College, PA
010	New York-No. New Jersey-Long Island, NY-NJ-CT-PA-MA-VT
011	Harrisburg-Lebanon-Carlisle, PA
012	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
013	Washington-Baltimore, DC-MD-VA-WV-PA
014	Salisbury, MD-DE-VA
015	Richmond-Petersburg, VA
016	Staunton, VA-WV
017	Roanoke, VA-NC-WV
018	Greensboro-Winston-Salem-High Point, NC-VA
019	Raleigh-Durham-Chapel Hill, NC
020	Norfolk-Virginia Beach-Newport News, VA-NC
021	Greenville, NC
022	Fayetteville, NC
023	Charlotte-Gastonia-Rock Hill, NC-SC
024	Columbia, SC
025	Wilmington, NC-SC
026	Charleston-North Charleston, SC
027	Augusta-Aiken, GA-SC
028	Savannah, GA-SC
029	Jacksonville, FL-GA
030	Orlando, FL
031	Miami-Fort Lauderdale, FL
032	Fort Myers-Cape Coral, FL
033	Sarasota-Bradenton, FL
034	Tampa-St. Petersburg-Clearwater, FL
035	Tallahassee, FL-GA
036	Dothan, AL-FL-GA
037	Albany, GA
038	Macon, GA
039	Columbus, GA-AL
040	Atlanta, GA-AL-NC
041	Greenville-Spartanburg-Anderson, SC-NC
042	Asheville, NC
043	Chattanooga, TN-GA
044	Knoxville, TN
045	Johnson City-Kingsport-Bristol, TN-VA
046	Hickory-Morganton, NC-TN
047	Lexington, KY-TN-VA-WV
048	Charleston, WV-KY-OH
049	Cincinnati-Hamilton, OH-KY-IN
050	Dayton-Springfield, OH
051	Columbus, OH
052	Wheeling, WV-OH
053	Pittsburgh, PA-WV
054	Erie, PA
055	Cleveland-Akron, OH-PA
056	Toledo, OH
057	Detroit-Ann Arbor-Flint, MI
058	Northern Michigan, MI
059	Green Bay, WI-MI
060	Appleton-Oshkosh-Neenah, WI
061	Traverse City, MI
062	Grand Rapids-Muskegon-Holland, MI
063	Milwaukee-Racine, WI
064	Chicago-Gary-Kenosha, IL-IN-WI
065	Elkhart-Goshen, IN-MI
066	Fort Wayne, IN
067	Indianapolis, IN-IL
068	Champaign-Urbana, IL
069	Evansville-Henderson, IN-KY-IL
070	Louisville, KY-IN
071	Nashville, TN-KY
072	Paducah, KY-IL
073	Memphis, TN-AR-MS-KY
074	Huntsville, AL-TN
075	Tupelo, MS-AL-TN
076	Greenville, MS
077	Jackson, MS-AL-LA
078	Birmingham, AL
079	Montgomery, AL
080	Mobile, AL
081	Pensacola, FL
082	Biloxi-Gulfport-Pascagoula, MS
083	New Orleans, LA-MS
084	Baton Rouge, LA-MS
085	Lafayette, LA
086	Lake Charles, LA
087	Beaumont-Port Arthur, TX
088	Shreveport-Bossier City, LA-AR
089	Monroe, LA
090	Little Rock-North Little Rock, AR
091	Fort Smith, AR-OK
092	Fayetteville-Springdale-Rogers, AR-MO-OK
093	Joplin, MO-KS-OK
094	Springfield, MO
095	Jonesboro, AR-MO
096	St. Louis, MO-IL
097	Springfield, IL-MO
098	Columbia, MO
099	Kansas City, MO-KS
100	Des Moines, IA-IL-MO
101	Peoria-Pekin, IL
102	Davenport-Moline-Rock Island, IA-IL
103	Cedar Rapids, IA
104	Madison, WI-IL-IA
105	La Crosse, WI-MN
106	Rochester, MN-IA-WI
107	Minneapolis-St. Paul, MN-WI-IA
108	Wausau, WI
109	Duluth-Superior, MN-WI
110	Grand Forks, ND-MN
111	Minot, ND
112	Bismarck, ND-MT-SD
113	Fargo-Moorhead, ND-MN
114	Aberdeen, SD
115	Rapid City, SD-MT-NE-ND
116	Sioux Falls, SD-IA-MN-NE
117	Sioux City, IA-NE-SD
118	Omaha, NE-IA-MO
119	Lincoln, NE
120	Grand Island, NE
121	North Platte, NE-CO
122	Wichita, KS-OK
123	Topeka, KS
124	Tulsa, OK-KS
125	Oklahoma City, OK
126	Western Oklahoma, OK
127	Dallas-Fort Worth, TX-AR-OK
128	Abilene, TX
129	San Angelo, TX
130	Austin-San Marcos, TX
131	Houston-Galveston-Brazoria, TX
132	Corpus Christi, TX
133	McAllen-Edinburg-Mission, TX
134	San Antonio, TX
135	Odessa-Midland, TX
136	Hobbs, NM-TX
137	Lubbock, TX
138	Amarillo, TX-NM
139	Santa Fe, NM
140	Pueblo, CO-NM
141	Denver-Boulder-Greeley, CO-KS-NE
142	Scottsbluff, NE-WY
143	Casper, WY-ID-UT
144	Billings, MT-WY
145	Great Falls, MT
146	Missoula, MT
147	Spokane, WA-ID
148	Idaho Falls, ID-WY
149	Twin Falls, ID
150	Boise City, ID-OR
151	Reno, NV-CA
152	Salt Lake City-Ogden, UT-ID
153	Las Vegas, NV-AZ-UT
154	Flagstaff, AZ-UT
155	Farmington, NM-CO
156	Albuquerque, NM-AZ
157	El Paso, TX-NM
158	Phoenix-Mesa, AZ-NM
159	Tucson, AZ
160	Los Angeles-Riverside-Orange County, CA-AZ
161	San Diego, CA
162	Fresno, CA
163	San Francisco-Oakland-San Jose, CA
164	Sacramento-Yolo, CA
165	Redding, CA-OR
166	Eugene-Springfield, OR-CA
167	Portland-Salem, OR-WA
168	Pendleton, OR-WA
169	Richland-Kennewick-Pasco, WA
170	Seattle-Tacoma-Bremerton, WA
171	Anchorage, AK
172	Honolulu, HI

NOTE.—Codes are assigned, beginning with 001 in northern Maine, continuing south to Florida, then north to the Great Lakes, and continuing in a serpentine pattern to the West Coast. Except for the Western Oklahoma economic area (126), the Northern Michigan economic area (058), and e economc areas man corres on n o 's, eac economc area s name or e metropolitan area or city that is the node of its largest CEA and that is usually, but not always, the largest metropolitan area or city in the economic area. The name of each economic area includes each State that contains counties in that economic area.

STATE OF CLEC COMPETITION

Introduction

Understanding precisely how CLECs offer competitive services is made difficult by the lack of public data on network operations. To provide greater understanding in this area, CCG Consulting, Inc. of Riverdale, Maryland was retained to develop survey data on CLEC network operations in six markets: Albany, NY, Augusta, GA, Boston, MA, Chicago, IL, Corpus Christi, TX and Portland, OR. These cities were selected because they represented a fairly broad cross-section of populations, business concentrations and serving incumbents.

CCG collected data from as many network-based competitors as possible in each of these markets. To protect the confidentiality of each CLEC, survey data was collected and aggregated by CCG Consulting. Companies that agreed to participate in the survey (in one or more markets) include:

Allegiance Telecom
AT&T
Birch Telecom
Broadview Networks
Choice One Communications
Conversent Communications
Covad
Electric Lightwave
Eschelon Telecom
Focal Communications
Ionex Communications
KMC Telecom
MCI Metro
McLeodUSA
New Edge Networks
NewSouth Communications
PaeTec Communications
TDS Metrocom
WorldCom
XO Communications

State of CLEC Competition

Although the survey does not include every provider in each market, we believe the sample to be sufficiently large to be representative of CLEC network operations in the market overall. For five of the markets we collected data for the entire MSA. In Boston, the MSA was so large that the CCG collected data for the area inside of Interstate 495. The number of CLEC Class 5 switches in each market is as follows:

	Albany	Augusta	Boston	Chicago	Corpus	Portland
Number of CLEC Switches[1]	5	1	17	15	1	7

The selection of the "market footprint" for analysis was made more difficult by the wide variation in the statistical areas (such as the MSA) defined by the Census Bureau, as well as the variation in the market focus of the individual CLECs. Although individual CLECs do not generally define their target market to match MSA boundaries, we worked with each CLEC to make sure that the data was compiled across the same footprint for each participant. This issue foreshadows a characteristic that is common to each of the following summaries: each market is unique, with different factors, geographies and competitive conditions influencing CLEC activity.

Although this summary of the data collected by CCG is intended to be presented in as a neutral a manner as possible, we are compelled to report one common finding: Competitive facilities development is not only modest (compared to the incumbent and the market), it is kaleidoscopic with no clear pattern that applies to all markets. What the data confirms is that emerging investment strategies of the competitive industry are nearly as diverse as the industry itself. While the majority of competitors in each market rely extensively on incumbent facilities, there is nearly always an exception to this rule. Such diversity is to be expected in a competitive environment, particularly one in which no single strategy has shown itself to be inherently superior to all others. With this overall conclusion in mind, the following summarizes the data we collected.

[1] None of the CLECs in any of these markets offer wholesale switching to any other CLECs.

Leased Customer Access

The starting point for our survey focused on how CLECs are leasing loops to gain access to end-user customers. We asked each CLEC to identify and quantify the different sources for leased facilities to end-user premises. The results are presented in Table 1.

Table 1: Source of Leased Loop Facilities by Surveyed CLECs

	Albany	Augusta	Boston	Chicago	Corpus	Portland
CLECs in Study	4	3	11	10	4	8
Total Market Voice Access Lines	560,487	270,157	3,567,497	5,688,622	220,866	762,382
Voice Grade 2-Wire UNE Loop	27,380	2,472	57,433	82,446	1,715	9,976
DSL UNE Loop	851	74	12,145	37,248	258	3,837
T1 UNE Loop	13	208	1,375	5,073	255	533
Retail T1 from ILEC	162	92	5,972	10,833	7	1,601
Retail T1 from 3rd Party[2]	7	0	422	2,161	0	0
DS3 UNE Loop	3	0	56	5	6	1
Retail DS3 from ILEC	17	0	217	501	0	128
Total	28,433	2,846	77,620	138,267	2,241	16,076

Table I relies on the following definitions of each loop type:

- **CLECs in Study.** This is the total number of CLECs who provided data for each of the markets.
- **Total Market Voice Access Lines**. This is the combination of the RBOC and the CLEC voice access lines for the study area. RBOC access lines came from HAI Model: Release FCC, loop counts as of 10/99. CLEC access line counts are roughly from the first quarter of 2002 (slightly different months for various CLECs). We did not have reliable RBOC data loop counts by MSA so we used voice access lines in order to demonstrate the relative size of the total market. However, the lack of data access lines understates total access lines.
- **Voice Grade 2-Wire UNE Loops** are Unbundled Network Element loops purchased directly from the ILEC from an interconnection agreement. A CLEC must be collocated to be able to order a 2-wire UNE Loop.

[2] This category includes DS-1s where the billing entity differs from the ILEC, but where the DS1 facility itself may be provisioned using the ILEC network facility. Thus this category is the maximum *potential* number of DS1s obtained from 3rd parties in that market and may, or may not, indicate the emergence of a nascent market in that MSA.

State of CLEC Competition

- **Digital Subscriber Line (DSL) UNE Loop** consists of a 2-wire clean copper DSL-capable loop. These quantities include DSL with and without line-sharing. Without line-sharing the CLEC gets a copper pair certified to have unimpeded signal to at least 12,000 feet. With line-sharing the CLEC gets the ability to offer DSL over a pair that is also providing ILEC voice service to the subscriber. These lines can be used to support a variety of types of DSL and the lines can often support data or voice. The use of these loops requires the collocation of DSLAMs, or DSL base stations.
- **T1 UNE Loop** consists of a 4-wire 1.544 Mbps capable unbundled loop purchased from an interconnection agreement. The CLEC must be collocated in order to utilize T1 UNE loops. The ILEC supplies these loops with T1 capable electronics.
- **T1 Retail Loop from the ILEC** consists of a 4-wire 1.544 Mbps retail circuit purchased from ILEC's retail tariff or access tariff. As a retail purchaser the CLEC is treated like any other ILEC customer in terms of product, price and term.
- **T1 Retail Loop from a 3rd Party** is a 4-wire 1.544 Mbps retail circuit purchased from a carrier other than the ILEC. The other providers in these particular markets are always interexchange carriers. None of the CLECs in these particular markets sell wholesale loops of any kind to other CLECs. We believe that the majority of these loops are ultimately served by and resold from the ILEC local network. Purchasing from a third party does not automatically equate to using an alternate network from the ILEC. In fact, we believe that the majority of these loops are really RBOC loops.
- **DS3 UNE Loop** is a UNE fiber loop cable of supporting a DS3 purchased from the ILEC from an interconnection agreement. These loops come with ILEC-provided electronics.
- **Retail DS3 from the ILEC** is a retail DS3 purchased from ILEC's retail tariff or access tariff. As a retail purchaser the CLEC is treated like any other ILEC customer in terms of product, price and term.

Table 2: Relative Size of the Largest CLEC for each Loop Category

	Albany	Augusta	Boston	Chicago	Corpus	Portland
Voice Grade 2-Wire UNE Loop	85%	100%	50%	31%	100%	77%
DSL UNE Loop	100%	100%	84%	94%	96%	91%
T1 UNE Loop	100%	71%	81%	80%	100%	47%
Retail T1 from ILEC	62%	96%	33%	44%	100%	55%
Retail T1 from 3rd Party	100%	N/A	93%	99%	N/A	N/A
DS3 UNE Loop	100%	N/A	84%	100%	100%	100%
Retail DS3 from ILEC	100%	N/A	82%	62%	N/A	47%

CLECs vary significantly in the manner in which they conduct business and thus in the way that they use loops. Table 2 shows the relative size of the single largest CLEC in each market for each loop category. This table is driven from the loop numbers presented in Table 1 above. As an example, Table 2 shows that in Albany that one CLEC uses 85% of the 27,380 voice grade 2-wire UNE loops shown in Table 1. Since the business plans of CLECs vary so widely, the CLEC that uses the greatest number of one type of loop may not necessarily use loops of other types. Again, using Albany as an example, the CLEC who uses 85% of the voice grade 2-wire UNE loops may not be the same CLEC who uses 100% of the DSL UNE loops.

On-Net Customer Access

In addition to relying on leased facilities, some CLECs have developed limited fiber networks that enable them to reach some buildings entirely over their own facilities. In our survey we define On-Net facilities to be those facilities where the CLEC owns both the physical loop and the electronics at both ends of the loop.

We have quantified CLEC On-Net opportunity by the number of buildings connected, the potential capacity of these systems and the number of T1 equivalents actually operating in Table 3. In addition, we have analyzed the geographic focus of CLEC facilities, which generally serve limited portions of each market (discussed below).

Table 3: On-Net Capability of Surveyed CLECs

	Albany	Augusta	Boston	Chicago	Corpus	Portland
Fiber CLECs/Total CLECs	1/4	1/3	4/11	5/10	1/4	4/8
Number of Connected Buildings	24	13	473	390	18	183
Buildings with Wholesale Loops	0	0	0	0	0	0
Buildings with Wholesale Dark Fiber	0	0	0	0	0	0
Number of Establishments in MSA	16,616	7,728	127,453	184,912	7,390	48,881
Number of Fiber Terminals	24	13	560	501	18	217
Fiber Terminal Capacity						
OC-48	0	0	224	236	1	47
OC-12	2	1	144	146	2	40
OC-3	22	12	192	118	15	130
Equivalent T1s Activated	85	66	4,332	4,394	125	551
Active T1s per Building	3.5	5.1	9.2	11.3	7.0	3.0

Following are the definitions of each line of the Table 3:

Fiber CLECs / Total CLECs. Fiber CLECs are those CLECs with at least one customer defined as an On-Net customer. On-Net is defined as a customer where the CLEC owns the loop and the electronics to reach the customer. All CLECs reported that On-Net customers in these markets were being served using fiber. Total CLECs are the total CLECs who participated in the survey for the given market.

Number of Connected Buildings represents the number of discrete street addresses with On-Net customers. These are often referred to as "lit" buildings. Note that lit buildings

are lower than fiber terminals in markets where some buildings are served by multiple CLECs.

Buildings with Wholesale Loops. Of the connected buildings, these are the buildings where a CLEC offers wholesale loops to other CLECs. None of the CLECs in these markets offers wholesale loops to other CLECs.

Buildings with Wholesale Dark Fiber. Of the connected buildings, these are the buildings where a CLEC offers dark fiber to other CLECs. None of the CLECs in these markets offers dark fiber to other CLECs.

Number of Establishments represents the total number of businesses in the market. The source of the number is Census Bureau data of Business Establishments/MSA.

Fiber Terminal Capacity shows the quantity of various sizes of fiber terminals installed in the lit buildings. The CLECs all reported that very few of these facilities are fully equipped or are fully utilized. For example, a CLEC may have an OC-48 terminal in a building but only have it equipped with a few OC-3 cards.

Equivalent T1s Activated represents the active total equivalent T1s of service that are in place in lit buildings. We also show the number of equivalent T1s per lit building.

Location of On-Net Buildings

The On-Net locations tend to be in the downtown area where CLEC owned fiber networks are most likely to exist. As discussed below, nearly all On-Net buildings are located in very limited geographical sections and pockets in each MSA.

Albany

Of the 41 On-Net buildings in Albany, 37 are within the City limits. Of those, 32 are in the downtown area.

Augusta

In Augusta all of the On-Net buildings are downtown. Eleven of the thirteen lit buildings are on two city streets.

Boston

There are 473 lit buildings in Boston. Of these, 325, or 69% are located in the three exchanges serving the downtown area. The remaining buildings are scattered throughout the study area. However, there is a low density of lit buildings in suburban area and very

few exchanges outside of the downtown area have more than 2 or 3 lit buildings in the entire exchange.

Chicago

Chicago has 390 lit buildings. 190 of these buildings are within the city limits. The majority of the remaining lit buildings are relatively close to major highways (i.e., Interstate 90, Interstate 84, Interstate 88 and Interstate 290.

Corpus Christi

There are 18 lit buildings in Corpus Christi. 12 of these buildings are clustered downtown.

Portland

The Portland MSA has 183 lit buildings. 132 of the buildings are within the city limits or Portland. The remaining On-Net buildings are clustered at various locations around the MSA. For example, there are 27 buildings clustered close together in Beaverton and 11 buildings clustered together in Vancouver, Washington.

Network Connectivity

As indicated above, CLECs depend heavily on ILEC access to reach and serve customers. As shown in Table 4 below, CLECs facilities are predominately deployed in digital configurations.

Table 4: Comparing Analog and Digital Connectivity[3]

	Albany	Augusta	Boston	Chicago	Corpus	Portland	Overall
Analog Connectivity[4]	27,380	2,472	57,433	82,446	1,715	9,976	181,422
DS1 Connectivity	6,408	8,784	290,424	539,064	9,288	64,440	918,408
DS3 Connectivity	13,440	0	183,456	340,032	4,032	86,688	627,648
Percent Digital	42.0%	78.0%	89.2%	91.4%	88.6%	93.8%	89.5%

[3] The quantities in this table are Voice Grade Equivalents.

[4] CCG is aware that some analog loops are being used to provide xDSL services and, as such, should more properly be counted as a form of digital connectivity. CCG does not, however, have the data to identify the percentage of the purchased analog loops that have been configured to provide such service.